

Quantum Institute Formation and Background

Q2 2002

- Quantum Executive Board Formed - Chairs: DDST and ADSR Members: DLs of C, CCS, MST, P, T
- Board chartered Quantum Steering Committee (QSC) - Chair: DADSR Members: Staff from C, CCS, MST, P, T
- QSC charged to create a cohesive lab-wide Quantum information, science and technology program and to form a quantum institute

Q3 2001

- Began the Visitor Program and Quantum Lunch Series (Diego Dalvit)
- Submitted a GPP proposal for a Quantum Institute Building for labs and offices

Q4 2001

- LANL selected to lead Quantum Computing roadmap effort for ARDA (Hughes and Doolen)

Q1 2002

- LANL decides to host next Squint Workshop (led by Daniel James)
- Received \$100K of IPD Funding for Program Development
- Received \$750K for renovations of labs, offices, briefing center at SIM40 (Physics Building)
- Held first international Quantum Computing Roadmap Meeting in San Diego



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Q2 2002

- Conducted first Program Development workshop for the QSC

Q3 2002

- Began renovations of labs, offices, briefing center
- Held second QC roadmap meeting in Nashville
- Conducted second program development workshop and finalized strategic goals and plan

Q4 2002

- LA Science Issue on Quantum Information, Science, and Technology Published
- Made first call on DOE Office of Science to discuss their possible interest in quantum science
- Held first lab-wide Quantum Information, Science, and Technology Workshop to define the technical framework of the Quantum Institute
- Held the Opening of the Quantum Institute
- Published the ARDA Roadmap
- Began weekly Quantum Teas
- Nearing completion of renovations



US Quantum Information Science Programs

Los Alamos National Laboratory
(strong strategic research emphasis)

\$11M

Los Alamos

ARDA



\$70M

National Science Foundation
(strong basic science emphasis)

\$25M

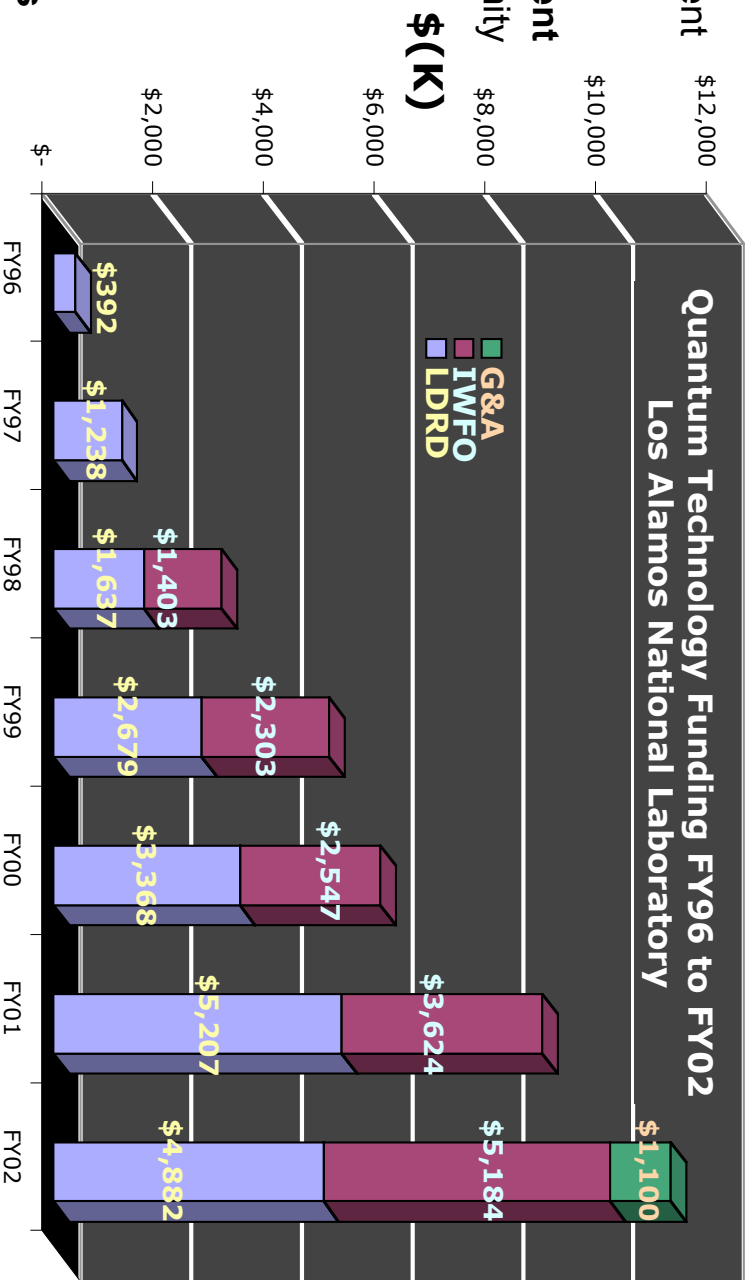


Well-coordinated intelligence community/Dod programs
(strong programmatic emphasis)



LANL Quantum Information, Science, and Technology Program

- a multi-disciplinary program
 - theory and experiment
 - a quantum institute
- programmatic component
 - intelligence community funding
- basic science/strategic research component
 - LDRD funding
- national & international collaborations
- workshops/conferences



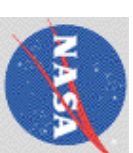
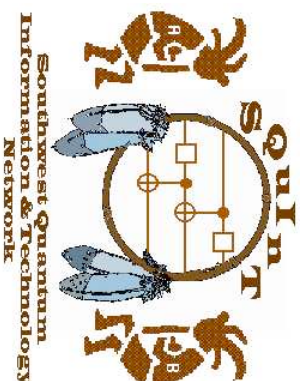
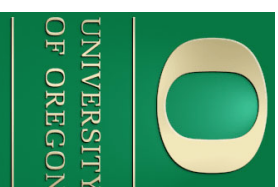
Southwestern Quantum Information Technology Network (SQUINT)



UNIVERSITY OF
CALCARY



CALTECH



Jet Propulsion
Laboratory

THE UNIVERSITY OF ARIZONA,



Quantum Institute: Path Forward (1)

Promote strategic collaborations

- build on strengths
- address gaps

Foster vigorous intellectual environment

- visitors, postdocs, students
- seminars, workshops, conferences
- informal gatherings

Develop strategic thrusts

- AMO
- CMP
- Theory (overarching)

Quantum Institute: Path Forward (2)

Target funding opportunities

- Office of Science: BES, ASCR
- DOE/NNSA
- DOD
- Intelligence Community (IC)
- Department of Homeland Security (DHS)
- LDRD, IPD, G&A Reinvestment

Quantum Institute recognition

- Maintain leadership role (e.g., ARDA roadmap)
- Build strategic alliances: universities & sponsors
- Build Lab-wide credibility